

# A global approach for recovery of arable land through improved phytoremediation coupled with advanced liquid biofuel production and climate friendly copper smelting process

## Deliverable D7.6:

1<sup>st</sup> project workshop at the EUBCE

presented by Phy2Climate project consortium

N°	Short	Beneficiary	Role
1	ITS	ITS Foerderberatung GmbH	CO
2	Fraunhofer	Fraunhofer Gesellschaft	BEN
3	AUR	Aurubis AG	BEN
4	LEITAT	LEITAT Technological Center	BEN
	CUJ	Central University of Jharkand	IL3P
5	IFVCNS	Institute of Field and Vegetable Crops	BEN
6	SUT	Silesian University of Technology	BEN
7	ETA	ETA Florence Renewable Energies	BEN
8	UHA	University Hasselt	BEN
9	INTA	National Institute of Agricultural Technology Argentina	BEN
10	UNSPMF	University of Novi Sad - Faculty of Sciences	BEN
11	BVA	Biovala	BEN
12	PWMCVV	Public Water Management Company Vode Vojvodine	BEN
13	LTC	Litoclean SL	BEN
14	CLH	Compania Logistica de Hidrocarburos S.A.	BEN
15	PUW	Pro Umwelt	BEN
16	UCB	Umwelttechnologie Cluster Bayern	BEN

CO: Coordinator, BEN: Beneficiary, IL3P: International linked 3<sup>rd</sup> party under article 14a

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<i>PRO</i>	Technical/economic progress report (internal work package reports indicating work status)	
<i>DEL</i>	Technical reports identified as deliverables in the Description of Work	<b>X</b>
<i>MoM</i>	Minutes of Meeting	
<i>MAN</i>	Procedures and user manuals	
<i>WOR</i>	Working document, issued as preparatory documents to a Technical report	
<i>INF</i>	Information and Notes	

Dissemination Level		
<b>PU</b>	Public	<b>X</b>
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services)	
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	
<b>CON</b>	Confidential, only for members of the Consortium	

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## 1 EXECUTIVE SUMMARY

The Phy2Climate D7.6 is a public report with the description of the first half-day event (as workshop) aligned with the European Biomass Conference and Exhibition (EUBCE), annually organized by ETA in different locations across Europe. EUBCE gathers biomass experts of academia and companies dealing with RTD from 80+ countries all around the world. Speakers will be Phy2Climate partners and high-level experts (chosen from EU and international organizations, companies and associations) to guarantee inspiring round tables and debates with a specialized audience. Its due date is M24 and it applies to the Task 7.3. The second half-day event (as workshop), aligned with the European Biomass Conference and Exhibition (EUBCE), will be organized in the second part of the project.

This report is strictly related and linked to the deliverables D7.1 - D7.3: Preliminary Communication & Dissemination Plan & periodic updates (First plan for communication, outreach and dissemination of the project results to different networks, stakeholders from public and private organisations and the scientific community).

The workshop was organized on the based of preliminary findings from three H2020 projects (CERESiS/GOLD/Phy2Climate).

The idea for a joint event, titled “**Squaring the circle between phytoremediation and biofuel production**”, with these three projects was originally thought of after project award, as it was realised that the projects have similar, if not the same, objectives. Therefore, through a series of online meetings involving at least one representative from each project, the agenda was formulated to include short presentations from each project, a presentation from a member of the European Commission’s Joint Research Council (EC JRC), and to conclude with a panel discussion. During the first 18 months of the Phy2Climate project, research was carried out for a deliverable on the role of policy and regulation, and the need to identify and eliminate barriers that may hinder the use of contaminated land for biofuel production. This topic was brought forward as the focus for the panel discussion in this workshop, for which additional members of the EC were invited.



## 2 INTRODUCTION

Phy2Climate is a H2020 project with title “A global approach for recovery of arable land through improved phytoremediation coupled with advanced liquid biofuel production and climate friendly copper smelting process”. The project consortium presents long-term expertise in soil remediation, phytoremediation, biofuel technologies and energy processes, environmental and social sustainability, legislative analysis, communication and dissemination as well as business development for innovative technologies.

The project aims at validating five phytoremediation pilots in selected sites with the most common soil contaminants worldwide. These pilots aim to producing energy crops that will eventually feed a pilot biorefinery focused on the production of four types of clean drop-in biofuels for the road and shipping transport sectors at TRL-5.

In the course of the outreach activities the focus is set on the analysis and mapping of stakeholders’ value chain to identify the most relevant Phy2Climate stakeholders including remediation, contaminated site owners, transport, biorefinery and the metallurgical industry sector as well as to assess their position towards the project results to set up tailored engagement strategies. During this process connections with relevant stakeholders and end-users will be integrated throughout the project.

The European Biomass Conference & Exhibition (EUBCE, [www.eubce.com](http://www.eubce.com)) combines one of the world’s leading R&D conferences with an international exhibition, and represents the leading platform for the collection, exchange and dissemination of scientific know-how in the field of biomass.

During the 30<sup>th</sup> edition of the European Biomass Conference and Exhibition (EUBCE), organised virtually by ETA, a **first workshop** was organized for enabling the Phy2Climate project to engage with the international community of bioenergy engineers and researchers, as well as international industry stakeholders.

Due to the persistence of travel restrictions and uncertainties tied to the COVID-19 pandemic, both the 29<sup>th</sup> and the 30<sup>th</sup> EUBCE editions took place virtually, and so did the Phy2Climate workshops held within. Nevertheless, the events were successful in terms of participation of internal and external audiences, and in terms of workshop outputs.

Since the beginning of the project in 2021, the consortium has ensured the participation of partners as speakers to leading events at both international and national level in order to address different audiences. Phy2Climate contributions and participation to various events other than main workshops, notably to: EUBCE previous



edition (2021), other projects' workshops, symposiums, international conferences on environment, energy and renewable fuels, etc.

### 3 PREPARATION FOR THE WORKSHOP AT EUBCE 2022

The aim of the workshop was to discuss the regulatory and policy framework at the intersection of nature-based contaminated land/soil management and biofuels areas and highlight existing gaps and blind spots, with a view to develop proposals to overcome such gaps. The vision is to facilitate the use of biomass grown in contaminated land for the purpose of phytoremediation to produce clean biofuels for the transport sector.

The current policies and regulatory frameworks for management and clean-up of contaminated sites in Europe do not include biofuel production as a valuable, mutually reinforcing option to remediate sites and generate clean energy. At the same time, all energy and climate policies and their associated projections envisage an increasingly significant role for biofuels for transport up to at least 2030, creating therefore the need for mobilization of significant amounts of (sustainable) biomass feedstock. Considerations related to the land use change effects, as well as the introduction of the low-iLUC risk feedstock concept, have sparked an interest on the exploitation of marginal and contaminated land for biofuels' feedstock production. It is therefore necessary to identify and eliminate the policy and regulatory barriers that may hinder the use of contaminated land for biofuel production.

Workshop organization:

Part 1 of the workshop: introduction and setting the scene;

Overview of the significance of biofuels produced from feedstock from remediated contaminated land; overview of policy landscape & challenges.

- 3 Project Presentations (GOLD/Phy2Climate/CERESiS); talk expectations were as follows: to provide an overview, aims & objectives of the three projects.
- Invited speaker: DG JRC: talk expectations were as follows: overview of the policy & regulatory landscape & challenges on management of contaminated land in Europe.



Part 2 of the workshop: panel discussion:

How do we visualise (main elements) the policy framework for the value chains proposed by the 3 projects to be exploitable? What are the challenges and needs at national and EU level to be considered?

Panel consisting of:

- Additional relevant EC speakers;
- Experts from the Consortiums (1 per consortium).

In the frame of Part 2 of the workshop, the discussion was expected to be developed around the preliminary findings of the policy analysis performed by the 3 projects, which has broadly shown that synergies between the land management frame and the sustainable biofuels market frame are currently lacking, and therefore a specified policy framework should be developed for bridging the gap between phytoremediation strategies and clean biofuel production and thus fully exploit the concepts proposed by the projects.

Three external speakers were specifically selected and invited to be part of the joint event based on their experience and relevant input associated with each project, these included:

- Maria Georgiadou, EC DG RTD, Senior Expert, to give an overview of the bio-energy aspect related to these projects and relevant in the EU;
- Luca Montanarella, EC JRC, Senior Expert, to give an insight and overview of the current work on the EU's Soil Strategy and Soil Observatory;
- Mirco Barbero, EC DG ENV, Policy Officer, to form part of the panel discussion specifically to share his opinion on soil protection, sustainable land use and connecting these aspects to energy production.

The event was shared and publicised to stakeholders through the EUBCE website, direct email invitation and social media posts (see the following figure).



**Figure 1: Example of social media promotion.**

#### **4 SUMMARY OF EUBCE JOINT EVENT: Phy2Climate, GOLD and CERESiS**

On Thursday 12<sup>th</sup> May 2022, at EUBCE 2022, three similar Horizon 2020 projects: Phy2Climate, GOLD and CERESiS, held a two hour workshop in which the three projects were presented, as well as hearing from European Commission experts on the subjects of renewable energy, soil protection and policy.

The workshop commenced with opening remarks from Maria Georgiadou, Senior Expert, European Commission, DG Research and Innovation, in which she summarised the EUs Green Deal manifesto and the EUs climate and energy policies. The renewable energy commitments for the 'Fit for 55' package and REPowerEU were also presented, concluding with a summary on the Horizon Europe programme.

After the opening remarks the three projects were presented, the aim of which is to remediate contaminated sites through the growth of specific contaminate absorbing crops, and then to use such crops as a feedstock to create biofuels. Each of the three projects is using its own method of conversion and different types of crops, all of which was summarised in this workshop (see figures 2 and 3).





To finish the first session of the workshop, Luca Montanarella, EC Joint Research Centre, Land Resources Unit, presented a summary of the EU's Soil Strategy and Soil Observatory (see figure 4). In this informative presentation we hear about the background and history of the EU's legislation and policy regarding soil quality, the importance of soils in the fight against climate change, and the vision the EU has for monitoring and protection. The main goal of the EU soil observatory is to monitor and accurately map contaminated sites throughout Europe, whilst engaging in scientific and citizen working groups.

To conclude, the workshop rounded off with a 45 minute panel discussion, moderated by Matteo Fermeglia, including the following panellists:

- Mirco Barbero, EC DG ENV, Policy Officer – Soil protection and sustainable land use;
- Luca Montanarella, EC JRC, Senior Expert – Sustainable Resources;
- Marko Perisic, Hasselt University, Belgium (see figure 5);
- Efthimia Alexopoulou, CRES, Greece;
- George Vourliotakis, Exergia, Greece.

To start with we heard from the three project representatives, of which the discussion revolved mostly around the gaps in policy that would help to bridge the gap between phytoremediation techniques and the production of biofuels. Marko mentioned policy gaps have been identified in different aspects of the project, including those for invasive species, waste management and agricultural, to name a few. Whilst George and Efi touched upon the need for better mapping of contaminated sites and looking toward investment and premiums for this type of value chain.

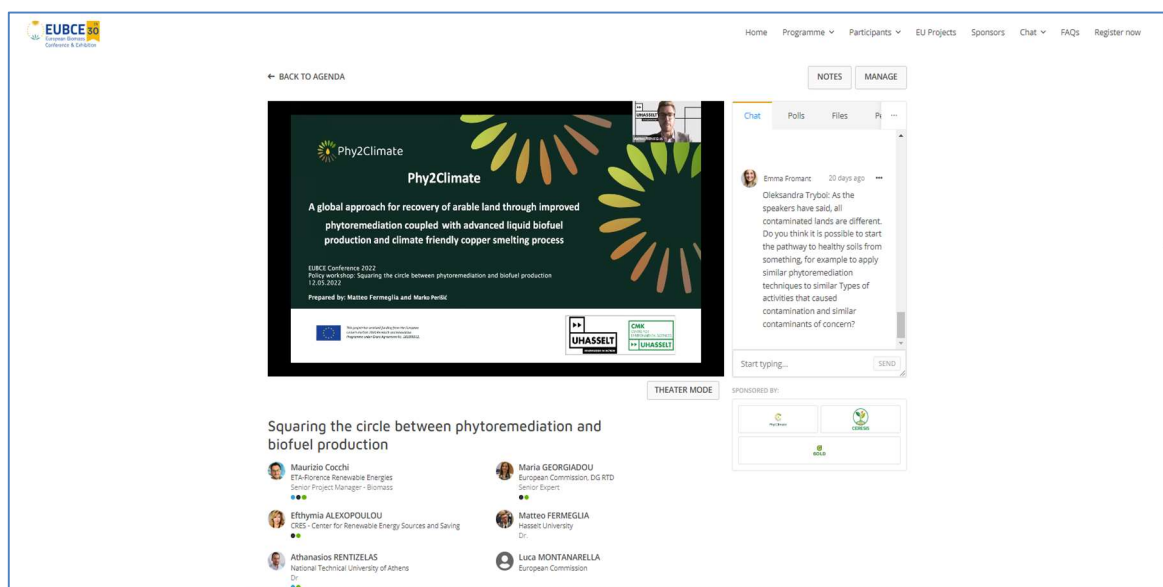
We also heard from Luca, who gave an overview of the EU's work on soil health, and highlighted the biggest challenge as the lack of clear definitions in regards to contaminated and degradation land. He also expresses a positive opinion towards the research outcomes of these projects, but highlighted his concern that if contamination is just displaced, this type of remediation and fuel production will not be a valid solution. Mirco echoed Luca's comments linked to clear definitions, and also expressed challenges of setting new soil laws. One of which is the need to apply laws that are accepted and implementable by all member states, in some cases this could ensue enormous costs associated with the remediation of contaminated land. Therefore, Mirco views cost cutting a positive aspect, but also that all options will be risk assessed for cost and benefits before being considered as applicable.



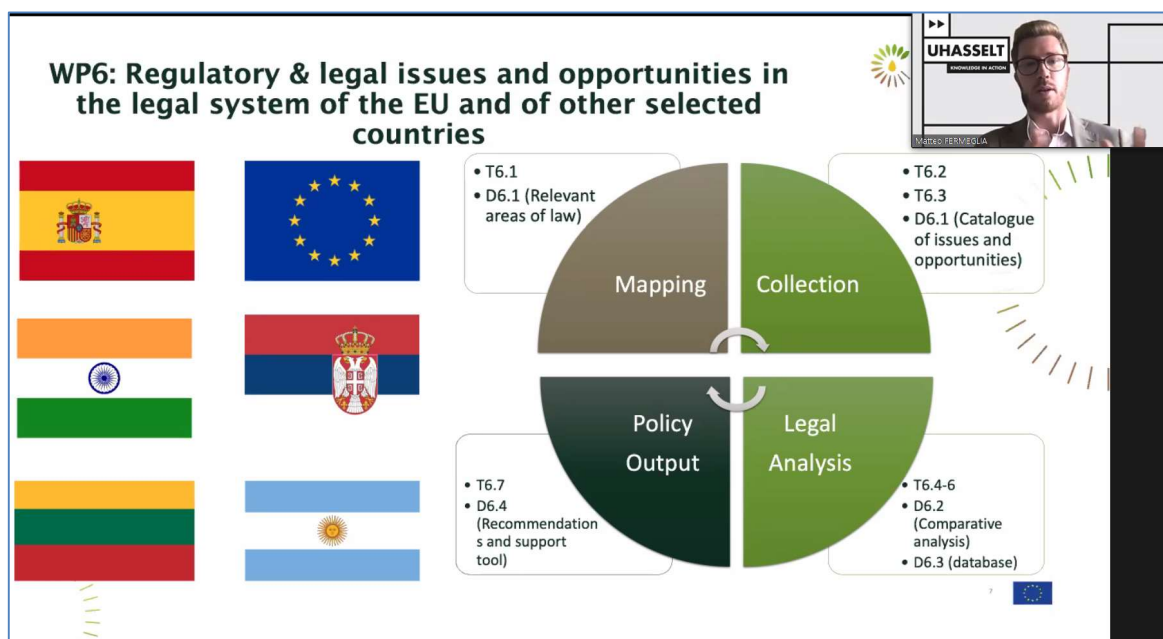
In conclusion, the panel agreed that there is huge pressure on all land available in Europe, however, to manage it efficiently, not only are clear definitions and mapping of soil status required, but also these value chains should be market driven and economically incentivised.

Finally, the panel discussion finished on a positive note from Luca that by starting at a local scale, with living labs and case studies, and by taking note of what is working well, a bigger solution will be achieved that will be easier to scale-up to European level.

A full recording of the workshop is available online and can be found [here](#).



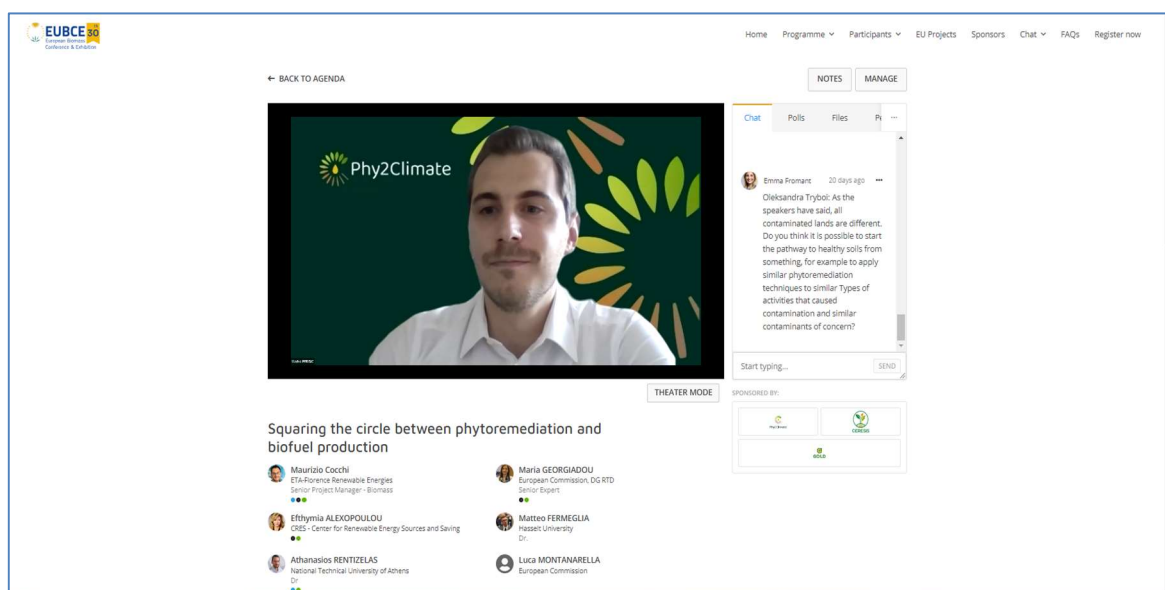
**Figure 2: Matteo Fermeiglia, Hasselt University, to introduce Phy2Climate project.**



**Figure 3: Matteo Fermeiglia, Hasselt University, to present Phy2Climate activities.**



**Figure 4: Luca Montanarella, EC JRC, Senior Expert, to give an insight and overview of the current work on the EU's Soil Strategy and Soil Observatory.**



**Figure 5: Marko Perisic, Hasselt University, during the panel discussion.**

## 5 CONCLUSIONS

In order to engage with the international community of biomass experts and bioenergy engineers and researchers, as well as international industries, a first project workshop (jointly organised in collaboration with two other EU projects: CERESiS and GOLD) was



held during the European Biomass Conference and Exhibition (EUBCE) that is organized annually by ETA.

Selected partners were invited to participate as speakers, and different aspects of the project related to phytoremediation and biofuels production were included in the agenda, from feedstock production and supply chains, including the role of policy and regulation in Europe, to technological aspects.

In addition to the event organized by the project, the consortium has also ensured the participation of partners as speakers to leading events at national and international level, to address different audiences (i.e., sustainability fairs, renewable energy events and conferences etc.).

## 6 ACKNOWLEDGEMENTS

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## 7 BIBLIOGRAPHY / REFERENCES

- Deliverable D7.1: Preliminary Communication & Dissemination Plan & periodic updates
- <http://ec.europa.eu>

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